 Westfalen	SAFETY DATA SHEET	Page : 1
		Revised edition no : 0
		Date : 15 / 10 / 2013
		Supersedes : 0 / 0 / 0
< 0,1 % NO + N2		WAG-G1025



2.2 : Non-flammable, non-toxic gases

Warning



SECTION 1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name : < 0,1 % NO + N2
SDS no : WAG-G1025

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses : Industrial and professional. Perform risk assessment prior to use.
Test gas/Calibration gas. Laboratory use. Contact supplier for more information on uses.

1.3. Details of the supplier of the safety data sheet

Company identification : Westfalen AG
Industrieweg 43
48155 MUENSTER Deutschland
Tel : 0049 2 51 6 95 0
Fax: 0049 2 51 6 95 1 94

E-Mail address (competent person) : sdb@westfalen-ag.de

1.4. Emergency telephone number

Emergency telephone number : Tel. (+49)551-19 24 0 (Giftinformationszentrum-Nord)

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture

Hazard Class and Category Code Regulation EC 1272/2008 (CLP)

• Physical hazards : Gases under pressure - Compressed gas - Warning - (CLP : Press. Gas Comp.) - H280

Classification EC 67/548 or EC 1999/45

: Not classified as dangerous substance / mixture.


2.2. Label elements

Labelling Regulation EC 1272/2008 (CLP)

• Hazard pictograms



• Hazard pictograms code : GHS04
• Signal word : Warning

 Westfalen	SAFETY DATA SHEET	Page : 2
		Revised edition no : 0
		Date : 15 / 10 / 2013
		Supersedes : 0 / 0 / 0
< 0,1 % NO + N2		WAG-G1025

SECTION 2. Hazards identification (continued)

- Hazard statements : H280 - Contains gas under pressure; may explode if heated.
- Precautionary statements
 - Storage : P403 - Store in a well-ventilated place.

2.3. Other hazards

: Asphyxiant in high concentrations.

SECTION 3. Composition/information on ingredients

3.1. Substance / 3.2. Mixture

Mixture.

Substance name	Contents	CAS No EC No Index No Registration no	Classification(DSD)	Classification(CLP)
Nitric oxide	: < 0.1	10102-43-9 233-271-0 ----- * 2	O; R8 T+; R26 C; R34	Acute Tox. 1 (H330) Ox. Gas 1 (H270) Skin Corr. 1B (H314) Press. Gas Comp. (H280) Eye Dam 1 (H318)
Nitrogen	: balance %	7727-37-9 231-783-9 ----- * 1	Not classified (DSD)	Press. Gas Comp. (H280)

Contains no other components or impurities which will influence the classification of the product.

* 1: Listed in Annex IV / V REACH, exempted from registration.

* 2: Registration deadline not expired.

* 3: Registration not required: Substance manufactured or imported < 1t/y.

Full text of R-phrases see section 16. Full text of H-statements see section 16.

SECTION 4. First aid measures

4.1. Description of first aid measures

- Inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
- Skin contact : Adverse effects not expected from this product.
- Eye contact : Adverse effects not expected from this product.
- Ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects, both acute and delayed

: In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/ consciousness. Victim may not be aware of asphyxiation. Refer to section 11.

4.3. Indication of any immediate medical attention and special treatment needed

: None.


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	SAFETY DATA SHEET	Page : 3
		Revised edition no : 0
		Date : 15 / 10 / 2013
		Supersedes : 0 / 0 / 0
< 0,1 % NO + N2		WAG-G1025

SECTION 5. Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray or fog.
- Unsuitable extinguishing media : Do not use water jet to extinguish.

5.2. Special hazards arising from the substance or mixture

- Specific hazards : Exposure to fire may cause containers to rupture/explode.
- Hazardous combustion products : Nitric oxide/nitrogen dioxide.

5.3. Advice for fire fighters

- Specific methods : If possible, stop flow of product.
Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems.
Use water spray or fog to knock down fire fumes if possible.
- Special protective equipment for fire fighters : In confined space use self-contained breathing apparatus.
Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.
Standard EN 469 - Protective clothing for firefighters. Standard - EN 659: Protective gloves for firefighters.
Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- : Evacuate area.
- : Try to stop release.
- : Ensure adequate air ventilation.
- : Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.
- : Monitor concentration of released product.

6.2. Environmental precautions

- : Try to stop release.

6.3. Methods and material for containment and cleaning up

- : Ventilate area.

6.4. Reference to other sections

- : See also sections 8 and 13.

SECTION 7. Handling and storage


7.1. Precautions for safe handling

- Safe use of the product : Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.
Only experienced and properly instructed persons should handle gases under pressure.
The substance must be handled in accordance with good industrial hygiene and safety procedures.
Do not smoke while handling product.
Ensure the complete gas system was (or is regularly) checked for leaks before use.
Consider pressure relief device(s) in gas installations.
- Safe handling of the gas receptacle : Refer to supplier's container handling instructions.
Do not allow backfeed into the container.
Protect cylinders from physical damage; do not drag, roll, slide or drop.
When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.)

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In case of emergency : Tel. (+49)551-19 24 0 (Giftinformationszentrum-Nord)

	SAFETY DATA SHEET	Page : 4
		Revised edition no : 0
		Date : 15 / 10 / 2013
		Supersedes : 0 / 0 / 0
< 0,1 % NO + N2		WAG-G1025

SECTION 7. Handling and storage (continued)

designed to transport cylinders.
 Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use.
 If user experiences any difficulty operating cylinder valve discontinue use and contact supplier.
 Never attempt to repair or modify container valves or safety relief devices.
 Damaged valves should be reported immediately to the supplier.
 Keep container valve outlets clean and free from contaminants particularly oil and water.
 Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment.
 Close container valve after each use and when empty, even if still connected to equipment.
 Never attempt to transfer gases from one cylinder/container to another.
 Never use direct flame or electrical heating devices to raise the pressure of a container.
 Do not remove or deface labels provided by the supplier for the identification of the cylinder contents.
 Containers should be stored in the vertical position and properly secured to prevent them from falling over.

7.2. Conditions for safe storage, including any incompatibilities

: Keep container below 50°C in a well ventilated place.
 Observe all regulations and local requirements regarding storage of containers.
 Containers should not be stored in conditions likely to encourage corrosion.
 Containers should be stored in the vertical position and properly secured to prevent them from falling over.
 Stored containers should be periodically checked for general condition and leakage.
 Container valve guards or caps should be in place.
 Store containers in location free from fire risk and away from sources of heat and ignition.
 Keep away from combustible materials.

7.3. Specific end use(s)

: None.

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Nitric oxide

- : ILV (EU) - 8 H - [mg/m³] : 30
- : ILV (EU) - 8 H - [ppm] : 25
- : VME - 8h France [mg/m³] : 30
- : VME - 8h France [ppm] : 25
- : MAC TWA 8H (NL) [mg/m³] : 0.25
- : KZGW/VLE-CH [mg/m³] : 30
- : TWA (BE) OEL 8h [ppm] : 25
- : TWA (BE) OEL 8h [mg/m³] : 31

DNEL: Derived no effect level (Workers)

: No data available.

DMEL: Derived minimum effect level (Workers)

: No data available.

PNEC: Predicted no effect concentration


: No data available.

8.2. Exposure controls

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 Westfalen	SAFETY DATA SHEET	Page : 5
		Revised edition no : 0
		Date : 15 / 10 / 2013
		Supersedes : 0 / 0 / 0
< 0,1 % NO + N2		WAG-G1025

SECTION 8. Exposure controls/personal protection (continued)

8.2.1. Appropriate engineering controls	: Oxygen detectors should be used when asphyxiating gases may be released. Provide adequate general and local exhaust ventilation. Ensure exposure is below occupational exposure limits (where available). Systems under pressure should be regularly checked for leakages. Consider work permit system e.g. for maintenance activities.
8.2.2. Individual protection measures, e.g. personal protective equipment	: A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered: PPE compliant to the recommended EN/ISO standards should be selected.
<ul style="list-style-type: none"> • Eye/face protection 	: Wear safety glasses with side shields. Standard EN 166 - Personal eye-protection.
<ul style="list-style-type: none"> • Skin protection <li style="padding-left: 20px;">- Hand protection <li style="padding-left: 20px;">- Other 	: Wear working gloves when handling gas containers. Standard EN 388 - Protective gloves against mechanical risk. : Wear safety shoes while handling containers. Standard EN ISO 20345 - Personal protective equipment - Safety footwear.
<ul style="list-style-type: none"> • Respiratory protection 	: Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.
<ul style="list-style-type: none"> • Thermal hazards 	: None necessary.
8.2.3. Environmental exposure controls	: Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties


Appearance	
Physical state at 20°C / 101.3kPa	: Gas.
Colour	: Mixture contains one or more component(s) which have the following colour(s): Colourless. Brownish gas.
Odour	: Odourless. No odour warning properties.
Odour threshold	: Odour threshold is subjective and inadequate to warn of overexposure.
pH value	: Not applicable for gas-mixtures.
Molar mass [g/mol]	: Not applicable for gas-mixtures.
Melting point [°C]	: Not applicable for gas-mixtures.
Boiling point [°C]	: Not applicable for gas-mixtures.
Flash point [°C]	: Not applicable for gas-mixtures.
Evaporation rate (ether=1)	: Not applicable for gas-mixtures.
Flammability range [vol% in air]	: Not applicable for gas-mixtures.
Vapour pressure [20°C]	: Not applicable.
Relative density, gas (air=1)	: Lighter or similar to air.
Solubility in water [mg/l]	: Solubility in water of component(s) of the mixture : • Nitrogen : 20 • Nitric oxide : 67
Partition coefficient n-octanol/water [log Kow]	: Not applicable for gas-mixtures.
Viscosity at 20°C [mPa.s]	: Not applicable.
Explosive Properties	: Not applicable.
Oxidising Properties	: None.

9.2. Other information

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In case of emergency : Tel. (+49)551-19 24 0 (Giftinformationszentrum-Nord)

	SAFETY DATA SHEET	Page : 6
		Revised edition no : 0
		Date : 15 / 10 / 2013
		Supersedes : 0 / 0 / 0
< 0,1 % NO + N2		WAG-G1025

SECTION 9. Physical and chemical properties (continued)

Other data : None.

SECTION 10. Stability and reactivity

10.1. Reactivity

: No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

: Stable under normal conditions.

10.3. Possibility of hazardous reactions

: None.

10.4. Conditions to avoid

: Avoid moisture in installation systems.

10.5. Incompatible materials

: For additional information on compatibility refer to ISO 11114.

10.6. Hazardous decomposition products

: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: No known toxicological effects from this product.
Rat inhalation LC50 [ppm/4h]	: • Nitric oxide : 57.5
Skin corrosion/irritation	: No known effects from this product.
Serious eye damage/irritation	: No known effects from this product.
Respiratory or skin sensitisation	: No known effects from this product.
Carcinogenicity	: No known effects from this product.
Germ cell mutagenicity	: No known effects from this product.
Toxic for reproduction : Fertility	: No known effects from this product.
Toxic for reproduction : unborn child	: No known effects from this product.
STOT-single exposure	: No known effects from this product.
STOT-repeated exposure	: No known effects from this product.
Aspiration hazard	: Not applicable for gases and gas mixtures.


SECTION 12. Ecological information

12.1. Toxicity

	: Classification criteria are not met.
EC50 48h - Daphnia magna [mg/l]	: No data available.
EC50 72h - Algae [mg/l]	: No data available.
LC50 96 h - fish [mg/l]	: No data available.

12.2. Persistence and degradability

: No data available.

	SAFETY DATA SHEET	Page : 7
		Revised edition no : 0
		Date : 15 / 10 / 2013
		Supersedes : 0 / 0 / 0
< 0,1 % NO + N2		WAG-G1025

SECTION 12. Ecological information (continued)

12.3. Bioaccumulative potential

: No data available.

12.4. Mobility in soil

: No data available.

12.5. Results of PBT and vPvB assessment

: No data available.

12.6. Other adverse effects

: WGK1 - Slightly hazardous for aquatic environment.
 Effect on the ozone layer : None.
 Effect on global warming : No known effects from this product.

SECTION 13. Disposal considerations

13.1. Waste treatment methods

: Ensure that the emission levels from local regulations or operating permits are not exceeded. Do not discharge into any place where its accumulation could be dangerous. Refer to the EIGA code of practice Doc.30 "Disposal of Gases", downloadable at <http://www.eiga.org> for more guidance on suitable disposal methods. Contact supplier if guidance is required.

List of hazardous waste codes (from Commission Decision 2001/118/EC) : 16 05 05: Gases in pressure containers other than those mentioned in 16 05 04.

13.2. Additional information

: None.

SECTION 14. Transport information

UN number : 1956
 Labelling ADR, IMDG, IATA



: 2.2 : Non-flammable, non-toxic gases

Transport by road/rail (ADR/RID)

Transport by air (ICAO-TI / IATA-DGR)

Transport by sea (IMDG)

Classification code : 1 A

H.I. nr : 20

Tunnel Restriction : E : Passage forbidden through tunnels of category E.

Emergency Schedule (EmS) - Fire : F-C


Emergency Schedule (EmS) - Spillage : S-V

14.6 Special precautions for user

Packing Instruction(s) : P200

Passenger and Cargo Aircraft : Allowed.

Packing instruction - Passenger and Cargo Aircraft : 200

	SAFETY DATA SHEET	Page : 8
		Revised edition no : 0
		Date : 15 / 10 / 2013
		Supersedes : 0 / 0 / 0
< 0,1 % NO + N2		WAG-G1025

SECTION 14. Transport information (continued)

Cargo Aircraft only	: Allowed.
Packing instruction - Cargo Aircraft only	: 200
Special precautions for user	: Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers: - Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.
UN proper shipping name	: COMPRESSED GAS, N.O.S. (Nitrogen, Nitric oxide)
Packing instruction	: P200
Transport hazard class(es)	: 2
Environmental hazards	: None.
Proper shipping name	: COMPRESSED GAS, N.O.S. (Nitrogen, Nitric oxide)
Class	: 2.2
IMDG-Marine pollutant	: None.
Proper shipping name (IATA)	: COMPRESSED GAS, N.O.S. (Nitrogen, Nitric oxide)
Class	: 2.2

SECTION 15. Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU legislation

Seveso directive 96/82/EC : Not covered.

National legislation


National legislation : Ensure all national/local regulations are observed.

15.2. Chemical safety assessment

: A CSA does not need to be carried out for this product.
Water-endangerment class Germany : WGK1 - Slightly hazardous for aquatic environment.

SECTION 16. Other information

Indication of changes	: Revised safety data sheet in accordance with commission regulation (EU) No 453/2010.
Training advice	: Receptacle under pressure.
Further information	: Classification in accordance with calculation methods of regulation (EC) 1272/2008 CLP / (EC) 1999/45 DPD. This Safety Data Sheet has been established in accordance with the applicable European Union legislation.
List of full text of R-phrases in section 3.	: R8 : Contact with combustible material may cause fire. R26 : Very toxic by inhalation. R34 : Causes burns.
List of full text of H-statements in section 3.	: H270 - May cause or intensify fire; oxidiser. H280 - Contains gas under pressure; may explode if heated. H314 - Causes severe skin burns and eye damage. H318 - Causes serious eye damage. H330 - Fatal if inhaled.

 Westfalen	SAFETY DATA SHEET	Page : 9
		Revised edition no : 0
		Date : 15 / 10 / 2013
		Supersedes : 0 / 0 / 0
< 0,1 % NO + N2		WAG-G1025

SECTION 16. Other information (continued)

DISCLAIMER OF LIABILITY

: Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.
 Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

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